

**Abstract**

A tire parameter sensing system (12) for sensing a parameter of a tire (16) includes a power transmitting antenna (44) that is actuatable for producing a magnetic field at a location of the tire (16). A rim (140) upon which the tire (16) is mounted includes first and second magnetically conductive surface portions (160 and 168) that form a drop well (156). A tire-based unit (34) is mounted in the drop well (156) so that a coil antenna (96) of the tire-based unit (34) is located adjacent to both the first and second magnetically conductive surface portions (160 and 168). The central axis of the coil antenna (96) extends in a direction parallel to the first magnetically conductive surface portion (160) and the first and second magnetically conductive surface portions (160 and 168) guide magnetic flux of the magnetic field to the coil antenna (96).